

**REMARKS**

Entry of the foregoing, reexamination and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.112, and in light of the remarks which follow, are respectfully requested.

Claims 1, 2, 9, 12 and 15 have been amended in response to issues raised in the Office Action. Claims 1-26 remain pending in the application with claims 16-26 withdrawn from consideration as not readable on the elected invention.

Claims 2, 9 and 15 were objected to for the reasons set forth in paragraph (4) of the Office Action. Applicants respectfully submit that claims 2, 9 and 15 as presently amended, are free of the terminology objected to by the Examiner. Accordingly, the objection to these claims should be withdrawn.

Claims 1-15 have been rejected under 35 U.S.C. §112, second paragraph, as indefinite for the reasons expressed in paragraph (6) of the Office Action. Applicants respectfully request reconsideration of this rejection for the following reasons.

Claim 1 has been amended to obviate the issues raised in the second and third paragraphs on page 4 of the Office Action. Regarding the phrase "filaments . . . emerge at the lower surface and lie adjacent thereto", Applicants respectfully submit that the Examiner's interpretation is the only reasonable conclusion that those of ordinary skill would reach based upon a review of the present disclosure.

Regarding the rejection of claim 11, Applicants again submit that the Examiner's interpretation is the only reasonable conclusion which could be reached by those of

ordinary skill in the art upon reading the disclosure. Note, in particular, the disclosure on page 11, lines 4-6, regarding the titre of the warp and weft yarns.

Claim 12 has been amended to obviate the issue raised in the second paragraph on page 5 of the Office Action. Thus, in view of the aforementioned amendments and remarks, withdrawal of the §112 rejection is requested.

Claims 1, 2 and 4-13 have been rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent 5,171,629 to Heidel et al in view of U.S. Patent 4,714,651 to Hartmann et al and U.S. Patent 6,235,657 to Schops et al for the reasons set forth in paragraph (8) on pages 6-10 of the Office Action. Reconsideration of this rejection is respectfully requested for the following reasons.

The present invention, in its broadest aspect, is directed to a laminate having at least one non-woven layer of organic synthetic filaments and at least one pre-consolidated woven web or scrim of glass fibers, the non-woven layer and woven glass fiber web or scrim being bound by needling such that a part of the organic filaments penetrate through the laminate and emerge at the lower surface thereof and lie adjacent thereto and wherein the formed laminate is subjected to a final consolidation with an acrylate or a styrene binder. The resultant laminated product exhibits improved mechanical properties, dimensional stability, resistance to delamination and fire resistance. The documents relied upon by the Examiner do not disclose or fairly suggest the laminates defined by the present claims.

Heidel '629 discloses a laminate consisting of one non-woven layer of synthetic organic fibers and one non-woven layer of glass fibers needled together and consolidated

with a specific binder, namely a melamine-formaldehyde pre-condensate. It is clear from the description of the prior art in column 1 thereof, the invention in Heidel '629 was designed to alleviate problems associated with the use of non-woven layers. Note column 1, lines 29-31, 51-52 and 60-68. The use of a non-woven glass fiber layer is critical to the invention of Heidel '629 (column 3, lines 48-51) as is the use of a melamine-formaldehyde condensate for final consolidation (column 2, lines 12-13 and 52 et seq.).

Thus, the laminate disclosed in Heidel '629 differs from that set forth in present claim 1 in at least two important aspects: a non-woven glass fiber layer vs. a woven one and a melamine-formaldehyde condensate vs. an acrylate or styrene binder.

Hartmann '651 discloses a roofing and sealing material impregnated with bitumen and having a carrier material composed of at least one non-woven layer of bonded organic fibers, optionally having at least one fabric layer of inorganic material. Suitable optional layers include "less elastic carriers, for example, spun-glass fabrics or woven glass fabrics" (column 3, lines 67-68). The carrier layers are not needled as required by the language of the present claims.

Moreover, Hartmann '651 discloses that the use of woven glass fabrics as carriers for roofing materials has decided disadvantages : elongation at break is very low and the "dimensional changes cause by dilatation lead as a rule to cracks because of the lack of elasticity and a low capacity to accommodate working" (column 1, lines 47-51); carrier materials like woven glass do not have "the required temperature-independent elasticity. As a result, cracks and leaks can again occur on the roof due to thermal dilatation (column 1, line 66 to column 2, line 3). These statements in Hartmann '651 clearly would

discourage those of ordinary skill from contemplating the use of woven glass layers in roofing laminates.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP §2143.

Applicants respectfully submit that there is no suggestion in Heidel '629 or Hartmann '651 which would motivate those of ordinary skill to replace the non-woven glass fiber layer required in Heidel '629 with the woven layer of glass fibers described merely as an optional component in Hartmann '651. The motivation suggested in the Office Action (increased dimensional stability) is contrary to the statements in Hartmann '651 regarding the disadvantages of using woven glass layers.

Moreover, there would be no reasonable expectation of success that by replacing the non-woven glass fiber layer with a woven layer, one would achieve the characteristics desired by Heidel '629. If a modification proposed by the Examiner would render the prior art invention unsatisfactory for its intended purpose, then there is no motivation to make the desired modification. See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Schops '657 does not supply the aforementioned deficiencies in the combined disclosures of Heidel '629 and Hartmann '651. The laminates of Schops '657 include two

non-woven layers of synthetic fibers and an intermediate reinforcing layer of laid fibers which may be glass. There is no disclosure of a woven glass fiber layer nor any suggestion that non-woven glass fiber layers may be replaced by woven glass fibers.

The §103 rejection relies on Schops '657 for a teaching of using styrene copolymers as consolidation binders. The motivation to do so is allegedly for "increased durability" (page 8 of the Office Action). Applicants respectfully submit that no motivation exists for replacing the melamine-formaldehyde condensate required by Heidel '629 with the styrene polymer disclosed in Schops '657 absent some teaching of equivalence between the two.

In summary, the invention of Heidel '629 requires a non-woven glass fiber layer and a melamine-formaldehyde condensate. There is no disclosure in Hartmann '651 which would motivate one of ordinary skill in the art to replace the non-woven glass fiber layer of Heidel '629 with a woven glass fiber layer. There is no disclosure in Schops '657 which would motivate those of ordinary skill to replace the melamine-formaldehyde condensate of Heidel '629 with a styrene copolymer. Thus, the combined disclosures of Heidel '629, Hartmann '651 and Schops '657 does not establish a *prima facie* case of obviousness and the §103(a) rejection should be withdrawn.

Claim 3 stands rejected under 35 U.S.C. §103(a) as unpatentable over Heidel '629, Hartmann '651 and Schops '657 as applied above and further in view of U.S.

Patent 5,616,395 to Baravian et al for the reason expressed in paragraph (9) of the Office Action. Claim 14 stands rejected under 35 U.S.C. §103(a) as unpatentable over Heidel '629, Hartmann '651 and Schops '657 as applied above and further in view of U.S.

Patent 4,816,327 to Binnersley et al for the reason set forth in paragraph (10) of the Office

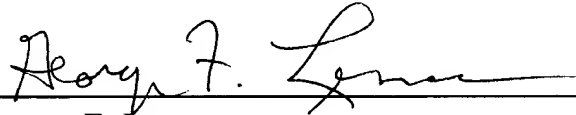
Action. Also, claim 15 has been rejected under 35 U.S.C. §103(a) as unpatentable over Heidel '629, Hartmann '651 and Schops '657 as applied above and further in view of U.S. Patent 5,571,596 to Johnson for the reason set forth in paragraph (11) of the Office Action. Reconsideration of these rejections is respectfully requested in view of the following.

Baravian '395, Binnersley '327 and Johnson '596 have been applied by the Examiner to show the features of dependent claims 3, 14 and 15. The disclosures of these patents, either individually or collectively, do not supply the deficiencies of the basic §103 rejection over the combination of Heidel '629, Hartmann '651 and Schops '657 for the reasons fully discussed above. Accordingly, the various §103 rejections which rely on Baravian '395 or Binnersley '327 or Johnson '596 do not establish a *prima facie* case of obviousness and these rejections should be withdrawn.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (703) 838-6683 at her earliest convenience.

Respectfully submitted,

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**Attachment to AMENDMENT dated September 5, 2002**

**Marked-up Claims 1, 2, 9, 12 and 15**

Please replace claims 1, 2, 9, 12 and 15 as follows:

1. (Amended) A laminate of two or more layers, comprising:  
  
at least one organic synthetic filament non-woven layer, and at least one woven web or scrim of glass fibers pre-consolidated by a binding agent,  
  
said at least one synthetic non-woven[s] and said at least one woven web[s] or scrim[s] are bound by needling such that a part of the [polyester] organic synthetic filaments penetrate through the laminate and emerge at the lower surface of the laminate and lie adjacent thereto; and  
  
wherein the formed laminate is subjected to a final consolidation by an acrylate or a styrene binder.

2. (Amended) The laminate according to Claim 1, wherein the binding agent is selected from the group consisting of polyvinylacetate [and] starch, urea and melamine.

9. (Amended) The laminate according to Claim 1, wherein said laminate is produced at a [minor] small draft in the needle machine.

12. (Amended) The laminate according to Claim 1, wherein the laminate comprises [three] at least two layers [and] of the synthetic non-wovens which are not pre-consolidated.

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**Marked-up Claims 1, 2, 9, 12 and 15**

15. (Amended) The laminate according to Claim 1, wherein the woven web or scrim contains glass fibers of E, C, mixtures [of the] thereof and ECR fibers.